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DIRECTORATE OF
INTELLIGENCE

Intelligence Memorandum

Eastern Europe: A Potential Market for Western Pollution Control Equipment?

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ER IM 72-157
November 1972

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CENTRAL INTELLIGENCE AGENCY
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INTELLIGENCE MEMORANDUM

EASTERN EUROPE: A POTENTIAL MARKET FOR WESTERN POLLUTION CONTROL EQUIPMENT?

Introduction

1. The manufacture of installations for environmental protection is a growth industry in the developed Western countries. In France, for example, this industry has been doing business currently estimated at 1.5 billion francs (nearly $300 million) per year, with an annual growth rate of some 15%. The United States is reported to have some 1,500 enterprises devoting all or part of their production efforts to pollution control equipment of various types.

2. Western manufacturers with an eye on the export market have been taking note of the growing interest in environmental protection in Eastern Europe. Although the East European countries can and do produce pollution control equipment, it appears that the quantity produced may not suffice for programs planned for the next few years and that technology may be less advanced in Eastern Europe than in Western countries.

3. In November 1972 a US trade group interested in promoting the sale of pollution control equipment will visit Poland and Czechoslovakia, both of which have indicated interest in purchasing some such equipment from Western countries. Firms in France also have indicated their intention to explore sales possibilities for antipollution technology in Eastern Europe.

4. This memorandum surveys the general level of ecological interest and awareness in East European countries, the magnitude of some pollution problems in the area, intentions to allocate funds for pollution control, and indications of inclination to buy needed equipment and technology from Western suppliers. Information is based mainly on articles that have appeared in the press of the various East European countries.

Note: This memorandum was prepared by the Office of Economic Research.

Conclusions

5. Prospects for Western sales of pollution control equipment to East European countries appear fairly promising. The West has pioneered in environmental protection and has efficient equipment to offer, and all the East European countries have been showing growing awareness of pollution problems associated with their increasing industrialization. Pollution problems tend to be more acute in these countries than their level of industrialization would suggest because many industrial processes, especially in the chemical industry, are outdated and inefficient and permit excessive amounts of pollutants to escape into the environment.

6. Within the past few years, all the East European countries have passed regulations designed to reduce existing pollution and to prevent an increase in the future. In most cases, new organizations have been set up to supervise execution of these regulations. All the countries have allocated funds specifically for pollution control, some on a fairly large scale.

7. The chemical and petroleum processing industries, the electric power industry, mining, and urban waste disposal appear to be the principal targets for pollution control action in the East European countries. Although all these countries must husband their convertible currencies carefully, it is likely that some pollution control technology and equipment, especially the more sophisticated types for the priority areas mentioned, will be purchased from the West. Poland appears to be the country most likely to seek technology from Western suppliers. East Germany is planning to produce most of what it requires and to export some equipment. The other East European countries probably will consider buying some efficient Western equipment, particularly specialized processes or plants.

8. The potential market for Western equipment appears to be most favorable for waste water treatment facilities, especially types designed to deal with specific pollutants, such as some chemicals that are unusually hard to remove from industrial effluents. Water pollution appears to be the major concern in all the East European countries. Highly efficient air filters, however, and other equipment for air purification also will be in demand. It is possible that a market could be developed for such items as earth-moving equipment, efficient incinerators, and acoustical materials, but at present there seems to be no evidence of a demand for them.

9. Concern for environmental protection may lead East European countries to replace some industrial plants sooner than would have been planned solely on the basis of production performance. When the investment required for pollution control measures at an inefficient plant would raise costs enough to make operation unprofitable, the regimes will be inclined

to replace the plant ahead of schedule rather than invest heavily in air and water treatment facilities. Western suppliers of efficient production plants that use minimum amounts of process water and hold air and water pollution at acceptable levels probably will find that East European governments are interested in discussing purchases.

Discussion

Growing Interest in Environmental Protection in Eastern Europe

10. Environmental protection, a subject of increasing concern in industrialized Western countries for a number of years, now is beginning to receive more attention in the Communist countries as their level of industrialization rises. Various units within the Council for Mutual Economic Assistance (CEMA) recently have begun to consider problems of pollution control.* In September 1972, at a meeting concerned with automation in the chemical industry, it was proposed that a joint institute be set up for research on air pollution, and early in October 1972 the Scientific-Technical Council held its first meeting on problems of the environment.

11. The level of concern, the types of pollution predominating, and the urgency of measures taken to deal with problems of environmental protection differ considerably from country to country within CEMA. Consequently there also are differences in the inclination of the various countries to seek help from the Western countries that have been dealing with the problems longer.

Types of Pollution

12. Environmental protection covers a wide range of subjects. It includes control of land use, replanting of mined-over or deforested areas, and noise-abatement programs, as well as the obvious measures for eliminating industrial pollutants from air and water and the treatment and disposal of urban sewage and wastes. The discussion here is limited mainly to water and air pollution, which appear to be the main points of emphasis

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* The members of CEMA are Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Romania, the USSR, and Mongolia. Mongolia and the USSR are not considered in the present discussion. Serious pollution problems are known to exist in the USSR -- for example, in Lake Baikal and in the Volga and Ural Rivers -- and efforts to deal with them have been only partly successful; but the USSR is not believed to be as interested in Western pollution control technology at present as is Eastern Europe, perhaps because administrative, rather than technical, difficulties may be the chief cause of Soviet failure to control pollution effectively.

in Eastern Europe at present and the areas in which the East European countries are most likely to seek Western technological aid. It is possible, however, that these countries also may be interested at some time in buying Western earth-moving equipment for land-reclamation and erosion control programs, highly efficient incinerators for disposing of urban wastes, or acoustical materials for lowering noise levels in industrial and residential structures.

13. The chemical, electric power, and mining industries are recognized as particularly productive of pollutants of both air and water, and it is especially in these fields that Western technology may be sought. Fluid wastes from the chemical industry in particular contain a wide range of pollutants the removal or neutralization of which requires a number of different types of treatment. In many cases, technology or equipment already proved by the more highly developed chemical industries of some Western countries could make it possible for East European countries to cut the cost of waste treatment and to recover valuable materials now being lost in the effluent.

General Outlook for Sales of Western Equipment

14. Because many East European plants, especially in the chemical industry, use old, inefficient processes, the amount of process water that has to be treated is large, and the effluent contains large amounts of pollutants that a more efficient process would have recovered as product. With the recent introduction of pollution control regulations limiting amounts of pollutants that may be discharged into the air or rivers, the most inefficient plants will be faced with the need to build extensive and expensive purification installations. In cases where the expense would cause costs to rise to a point where operation became unprofitable, there will be considerable incentive to replace the plants with more modern, more efficient production installations. Western countries may have an opportunity to sell processes and equipment for such plants, providing financing problems can be solved. Most of the East European countries already are indebted for sizable purchases of Western equipment in the past, and new major purchases of entire plants and large items of equipment will have to be weighed carefully. In contrast, purchases of pollution control equipment would require a smaller expenditure of convertible currency. The East European governments may, therefore, be more willing to buy this type of equipment from the West than to contract for new production facilities.

Environmental Protection Programs in Individual East European Countries

Poland

15. Poland probably leads the East European countries in developing an integrated program to protect the environment and control pollution. In 1971 a Committee for the Preservation of Man's Environment was formed, headed by a vice-premier, to coordinate the activities of several organizations concerned with pollution control, and the level of funds allocated for antipollution measures was raised considerably.

16. Poland has earmarked 62 billion zlotys ($1.8 billion)* to be spent for protection of the environment during 1971-75, an increase of nearly 40% over the amount spent for this purpose during 1966-70. About 18 billion zlotys (29% of the total $62 billion) is to be spent for water treatment; 7 billion zlotys (11%) for air purification, of which about 5 billion zlotys will be for electrical filters for industrial enterprises; about 13 billion zlotys (21%) for sewage treatment (presumably municipal sewage); and about 7 billion zlotys (11%) for "protection of the earth's surface." Planned use of the remaining 17 billion to 18 billion zlotys (28%) is not known.

17. The Ministry of Mining and Metallurgy is to be responsible for one-fifth of all projects for environmental protection (whether by number

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* In this memorandum, values originally stated in Polish zlotys were converted using the ratio of domestic to dollar values for Polish exports of machinery and equipment in 1969. A similar ratio based on 1969 export and import data was used in converting Hungarian forints. In the absence of comparable data for other East European countries, values stated in domestic currencies were converted using current tourist exchange rates, which overvalue the East European currencies less than do the official rates of exchange. These various rates are shown below:

		Units of East European Currency per US $		
Country	Currency	Official Exchange Rate	Tourist Exchange Rate	Calculated Ratio for Machinery in Foreign Trade in 1969
Poland	Zloty	3.68	22.08	35
East Germany	Mark	2.05	3.15	N.A.
Czechoslovakia	Koruna	6.63	15.00	N.A.
Romania	Leu	5.53	16.00	N.A.
Bulgaria	Lev	1.08	1.85	N.A.
Hungary	Forint	10.81	27.63	44

or value is not clear). The chemical industry is to account for slightly more than one-tenth, by value, with expenditure of about 6.4 billion zlotys (about $180 million) during 1971-75, an increase of nearly 50% over the amount spent during 1966-70. This sum amounts to about 6% of all investments in the chemical industry in the period. Experience in some Western countries suggests that this share is low and may have to be increased. For example, a detailed questionnaire circulated in West Germany indicated that expenditures for pollution control amounted to nearly 11% of production-associated investments in the chemical industry during the 1960s and that such expenditure will increase considerably in the 1970s. In the United States, a leading chemical industry journal estimated expenditures for control of air and water pollution at 6% of capital spending in 1970 and 9% in 1971. The share is expected to rise further. Another US study indicated that pollution control expenditures during 1972-75 will amount to only a little less than the total of such expenditures in all preceding years.

18. The main emphasis of Polish pollution control measures is on improving the quality of water. Only 25% of the surface water in Poland is considered satisfactory for municipal use, and estimates of the extent of severe pollution range from 28% to 36% of all rivers. Special attention is to be given to cleaning up the waters of the Vistula and Oder Rivers.

19. Poland already has indicated intention to purchase pollution control equipment from Western countries. Negotiations have been conducted with a British firm for purchase of pollution control equipment for the chemical industry that may be worth some $5 million. The French also have offered pollution control equipment to Poland. Hard currency for such purchases is said to have been made available to such enterprises as the Plock and Tarnow petrochemical plants. The Tarnow plant reportedly will have about 400 million zlotys ($11 million) to spend on environmental protection measures during 1971-75, but the share that may be allocated in hard currency is not known.

East Germany

20. Next to Poland, East Germany probably has the best developed program for environmental protection. Since 1970, numerous laws and regulations have been passed stipulating control measures in various fields, and a special Ministry of Environmental Control and Water Conservancy was established to exercise coordination and control. It is expected that more than 22 billion DM ($7 billion) will be spent during 1971-75 on various environmental protection measures.

21. Water pollution is the primary East German concern. It is estimated that some 90% of East German rivers are badly polluted, and the country reputedly has the most intensively used water resources in the world. In highly industrialized areas, water is reused as much as five times.

In addition to introducing industrial technologies that are more economical in the use of water, East Germany has spent large sums on water purification. In 1971, 137 million DM ($43.5 million) were spent for this purpose, 52 million DM ($16.5 million) in the chemical industry alone.

22. Air pollution is beginning to receive increasing attention. At present the level of spending for air-cleaning equipment considerably exceeds the level for water purification. The chemical industry is investing more than 270 million DM ($85.7 million) for the reduction of air pollution in 1972. In addition, all new power stations are being equipped with precipitators to remove particles from exhaust gases, and brown-coal processing plants now are subject (since June 1971) to strict limitations on dust emissions.

23. Although the demand for pollution control equipment in East Germany will grow as the new regulations for environmental protection are increasingly implemented, imports of such equipment are not likely to be large. East Germany is planning to cover most of its needs from domestic production and, in fact, is planning to export such installations. Nevertheless, special processes for dealing with specific types of pollution, especially chemical pollution, may be purchased from Western countries.

Czechoslovakia

24. Czechoslovakia is becoming increasingly ecology conscious. Since the beginning of 1972 there has been a rash of articles in the press dealing with various problems of environmental protection and means of solving them, and in the spring of 1972 Councils for Environmental Problems were established in each **kraj** to make recommendations for environmental protection measures and to supervise their execution.

25. Half of the rivers in Czechoslovakia reportedly are excessively polluted. The chemical industry is the chief source of pollutants, but metallurgy and the pulp, sugar, and starch industries also contribute heavily. In 1972, more than 250 million korunas ($17 million) have been allocated for water purification plants. One of the largest is at the Zaluzi chemical plant, where 111 million korunas ($7 million) are to be invested in a second stage for a water-treatment installation. Others will be located in other major chemical and pharmaceutical plants, some of which now have no treatment facilities at all. Another large treatment installation, the total cost of which will be 223 million korunas ($15 million), is at the paper works in Steti, which is to replace several older, smaller plants that are being phased out, partly for ecological reasons. This is an illustration of a growing tendency, particularly in the pulp, sugar, and starch industries, to replace small, inefficient plants by larger, modern plants that not only

will operate more economically but also will use minimum amounts of water, will produce minimum outputs of pollutants, and will be equipped at the outset with water-treatment facilities.

26. Petroleum and petroleum products are another serious source of water pollution in Czechoslovakia, frequently through accidental spillage and leakage. Special attention is to be given to improving storage and transportation facilities to minimize such pollution. Sludge from mining activities also is a problem. Facilities for treating sludge from coal and ore mining operations are supposed to be built, but apparently some foot-dragging has occurred.

27. Air pollution is regarded in Czechoslovakia as a serious and long-term problem. The principal sources of this pollution – damage from which currently is estimated at 3.5 billion korunas ($230 million) per year – are, in order of importance: the electric power industry, metallurgy, the production of construction materials, home heating units, and transportation. Emissions from motor vehicles are recognized as a growing source of pollution in the transportation sector. The current program for dealing with air pollution in Czechoslovakia runs through 1980 and emphasizes especially the reduction of pollution by powerplants.

28. As one of the three most industrialized East European countries, Czechoslovakia will have larger requirements for pollution control technology than Romania, Bulgaria, and Hungary and may, therefore, be more inclined to obtain such technology from Western sources. The environmental protection program in Czechoslovakia, however, appears to be a rather recent development, and it is not possible, from the limited information available on concrete plans, to predict whether or not purchases from the West are likely to be large.

Romania

29. Water pollution is the chief environmental problem in Romania. In April 1972 a law on water management was passed that makes obligatory the adoption of technological processes that use the smallest possible amounts of water, recirculate water to the greatest possible extent, and assure the least possible levels of pollutants in effluents. It is claimed that by tripling the number of purification stations built during the past ten years it has been possible to prevent water pollution from increasing even though industry has been growing very rapidly, but only about one-fifth of the national waters are considered potable at present. Some 500 additional purification stations are to be built during 1971-75.

30. So far as air pollution is concerned, Romania seems to be more concerned with pollutants from motor vehicles than with industrial emissions. Research has been undertaken to reduce harmful exhaust gases

from internal combustion engines of Romanian manufacture, but there is no indication that low-emission engines actually are being produced in Romania. Urban waste disposal and pollution resulting from mining operations also have been noted as problems but do not appear to be of urgent concern in Romania at present.

31. Romania is stressing research on environmental protection and claims some success in devising methods of treatment. One researcher, for example, claims to have developed new flocculants for water purification. Nevertheless, it appears that introduction of pollution control measures in industry – and also in agriculture – is lagging in spite of official encouragement.

32. The Romanians are likely to give serious consideration in the future to pollution control technology when buying new industrial installations. They probably will prefer to buy processes that make the most efficient use of water and discharge the smallest amounts of pollutants. They have given no indication, however, of interest in buying purification plants or processes for dealing with existing pollution problems. Apparently they are depending for the present on their own research to deal with these problems. Air purification may become a greater concern in the next few years, and there may be opportunity for Western firms to sell industrial air-cleaning equipment to Romania, inasmuch as domestic research and development does not appear to be heavily concentrated in this field.

Bulgaria

33. The Bulgarians are becoming alarmed at the growing problems of pollution in their country, but their efforts at control appear to be spotty and ineffectual. They obviously are concerned about soil erosion, about pollution of lakes and of five-sixths of the country's rivers, and about gas and dust emissions into the atmosphere in areas of concentrated industrialization. A Law to Protect the Air, Water, and Soil Against Pollution was adopted as far back as 1963, and in 1967 a Law to Protect Nature and Conserve Tillable Land was promulgated, but so far no central organization has been set up to handle ecological matters. A half dozen or more agencies exercise responsibility in various spheres, and problems appear to be considered individually rather than as part of a comprehensive program. Follow-up often seems to be faulty. There have been complaints that pollution control equipment, including some imported from East Germany and Hungary, has been allowed to deteriorate instead of being installed for use and that some facilities have been improperly designed or operated.

34. In 1968 the Council of Ministers allocated 70 million leva ($38 million) initially for a program to control air, water, and soil pollution. Of this amount, 11 million leva (16%) were for air treatment. This was to be followed by a longer term program (presumably the 1971-75 five-year plan) for which 243 million leva ($130 million) were provided: 200 million (83%) for water purification, 35 million (14%) for air, and 8 million (3%) for soil. Total allocation for environmental protection during 1971-75, including forestation, is reported to be 380 million leva (about $200 million).

35. A unified law on environmental protection is being drafted for Bulgaria, and by the end of 1972 a program is to be submitted for the gradual development of antipollution equipment after 1975. The Bulgarians hope that they can manufacture such equipment and integrate their efforts with those of other CEMA countries. In the interim, in view of the growing concern for antipollution measures and the unsatisfactory performance by Bulgarian institutions to date, it is likely that Bulgaria will import pollution control equipment. Although the USSR and other East European countries doubtless will be favored as suppliers, Western manufacturers may be able to market special devices or processes, or even more conventional equipment such as dust precipitators, if prices are favorable and if delivery includes follow-up to insure operational efficiency.

Hungary

36. To judge from the small amount of information available, water pollution is the main ecological problem in Hungary. A water conservation law dating from 1964 forbids contamination of national waters and in cases of infringement levies fines that increase if corrective action is not taken promptly. Petroleum derivatives and chemicals, especially agricultural chemicals, have been noted as leading pollutants.

37. Hungarian expenditures for pollution control apparently will be sizable. One metallurgical plant alone is planning to spend more than 90 million forints ($2 million) for water purification equipment during 1971-75.

38. The need for increased water purification equipment and monitoring devices in Hungary is recognized. It is possible that some may be bought from other countries to supplement Hungarian output. Hungary also manufactures air purification equipment for industrial use and is known to have exported such installations to other CEMA countries.